

# A Reporter's Guide to Terrorism



Pentagon 2001

## A Practical Guide to the Threat of Terrorism



# Introduction

This guide has been developed to provide accurate information concerning terrorism. Unfortunately in the past, inaccurate information reported by the media clouded the issues and confused people about the threat and the reality. Also, poor control of the message aided terrorists in the past and caused the spread of hoaxes that plagued this country, particularly since 1997. This guide is not a complete source of information but should serve as a starting point.

The guide is divided into three broad sections as follows:

1. Definitions
2. Terrorist Weapons
3. Terrorist Incidents

## Definitions

We must define terrorism so we can understand what it is, and what it isn't. Unfortunately, there is no single universal definition of terrorism. In fact, there are several. These are the most common definitions:

Title 22 of the United States Code, Section 265f(d) defines terrorism as:  
*Premeditated, politically motivated violence perpetrated against noncombatant targets by sub-national groups or clandestine agents usually intended to influence an audience.*

The U.S. Department of Justice defines terrorism in the following manner:  
*A violent act or and act dangerous to human life, in violation of the criminal laws of the United States or any segment to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.*

The Federal Bureau of Investigation (FBI) defines terrorism as:  
*The unlawful use of force or violence against persons or property to intimidate or coerce a government, the civilian population, or any segment thereof, in furtherance of political or social objectives.*

These three definitions have common themes. First, terrorism must involve criminal activity or action, not simply a belief. The activity must be unlawful and involve force or violence against members of the civilian population. Also, terrorism involves political or social objectives. Terrorists bypass established institutions and use violence to force change in society by frightening citizens and forcing governments to change policies toward their cause.

It is sometimes hard to differentiate terrorist acts from other criminal activity. Terrorism is not defined by attitudes or opinions of individuals alone. As Americans, we have the right to our own opinions under the U.S. Constitution – even if those opinions are unusual or unpopular. For example, some people don't believe in abortion or maybe don't believe that humans should eat animals for food. They have the right to that opinion. However,

when that opinion is expressed through actions that violate the law and meet the other conditions as defined above, then the individual is a terrorist and those actions constitute terrorism. Terrorism is based on *actions* not opinions.

Terrorism can be divided into two categories- international terrorism and domestic terrorism.

### **Domestic Terrorism**

Domestic terrorism involves groups that are based and operate entirely within the United States and Puerto Rico. These groups do not have any foreign entity or government direction, and their acts are directed at the United States government or its citizens. The best-known example of a domestic terrorist act is the Oklahoma City bombing in April 1995. Domestic terrorism can further be broken down into sub-categories:

- Right-wing terrorist groups
- Left-wing terrorist groups
- Special interest groups

Each of these subcategories has its own set of motivations and tactics.

Right-wing terrorist groups are generally interested in issues such as white supremacy, and opposition to gun control, government and taxation. Many of these groups engage in paramilitary and survivalist training.

Left-wing terrorist groups generally profess a revolutionary doctrine and see themselves as protectors of the American people against capitalism and imperialism. Puerto Rico has suffered from a left-wing terrorist group, Armed Forces for National Liberation (FALN), which has been linked to 130 bombings. With the dissolution of communist government in the former Soviet Union, most left-wing groups have lost their ideology and their threat has been greatly diminished.

Special interest groups are different from right or left wing groups in that they focus on single issues rather than wide sweeping political change. Most of these groups involve "animal rights," Environmental preservation and

“right to life.” On the surface, these groups’ focus appears to be laudatory, but their actions have caused death, injury and tremendous property damage.

## **International Terrorism**

International terrorism against the United States is always foreign-based and is directed by countries or groups outside the United States. The Sept. 11, 2001, terrorist attacks on the World Trade Center in New York City and the Pentagon in Arlington, Va., caused about 3,000 deaths and enormous economic and property damage. Another example of international terrorism is the bombing of Pan Am Flight 103 in 1988, which killed 270 people. Two Libyan intelligence operatives were indicted for their role in the attack. Another classic example of international terrorism was the bombings of the U.S. embassies in Kenya and Tanzania 10 years later.

## **Weapons of Mass Destruction**

Another term that is used quite often in regard to terrorism is “weapons of mass destruction.” Weapons of mass destruction are defined in the USC Section 2332a as:

*(A) any explosive, incendiary, or poison gas, bomb, grenade, rocket having a propellant charge or more than four ounces, missile having an explosive or incendiary charge of more than one quarter ounce, mine or similar device similar to the above; (B) any weapon involving toxic or poisonous chemicals; (C) any weapon involving a disease organism; (D) any weapon that is designed to release radiation or radioactivity at a level dangerous to human life.*

# Terrorist Weapons

Terrorists use a number of different tactics to achieve their goals. In the past, terrorists used armed attacks, kidnappings and airplane hijackings to get the world's attention. However, the tactics and the weapons have changed over the years. The Sept. 11, 2001, attacks are a striking example of low technology/high consequence methods that kill people. Terrorists have proven, beyond a doubt, that they are quite willing to die for their cause. There are other even more sinister and dangerous weapons beyond conventional weapons and basic ambush techniques that terrorists can use.

Five types of WMD that can be used by terrorists to achieve their political or social agenda can be categorized by the acronym "B-NICE." They are:

- **B-Biological**
- **N-Nuclear**
- **I - Incendiary**
- **C-Chemical**
- **E-Explosive**

## Biological agents

Terrorists may select biological agents from among four common types:

- Bacteria and rickettsia are single-celled organisms that cause a wide variety of diseases in animals, plants and humans. Rickettsia live inside individual cells. Bacteria cause diseases by means of two mechanisms, one by invading the tissue, the other by producing poisons (toxins). Bacterial agents that would most likely be used by terrorist groups include:

Anthrax  
Brucellosis

Cholera  
Plague  
Tularemia

- Rickettsia agents

Q-fever

- Viruses are the simplest type of microorganism and are much smaller than bacteria. Viruses lack a system for their own metabolism and are therefore dependant on host cells to provide the necessary machinery for the virus to live. Examples of viruses include:

Smallpox  
Venezuelan equine encephalitis  
Ebola

- Biological toxins are poisonous substances produced by a variety of living organisms such as fungi, flowering plants, bacteria and animals. Biological toxins are some of the most poisonous substances known. Examples of biological toxins include:

Botulinum toxins  
Staphylococcal Enterotoxins  
Ricin  
Mycotoxins

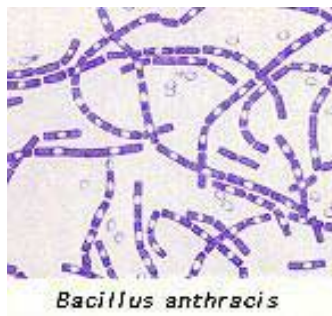
The following discussion includes each of these biological agents with their characteristics and physiological effects.

## **Anthrax**

Anthrax is an acute bacterial disease caused by the bacterium *Bacillus anthracis*. Two forms of anthrax commonly occur, skin (cutaneous) anthrax and inhaled (inhalation) anthrax, which is much more deadly than the cutaneous form. Cutaneous anthrax begins as a skin infection with an itching sensation that turns into a depressed black lesion. This form of anthrax can turn septic and spread throughout the body via the bloodstream and lymph

nodes. The skin infection can be caused by direct contact with contaminated wool, hides or tissues of infected herbivorous animals (cattle, sheep, goats). Cutaneous anthrax is readily treatable with antibiotics. Untreated cutaneous anthrax has a fatality rate of 5-20%.

Inhalation anthrax results from breathing anthrax spores. These spores get deep into the lungs causing fever, shock and eventually death. Inhalation anthrax has two phases. After an incubation period of one to seven days, the initial symptoms include malaise, fever, fatigue, non-productive cough and chest discomfort. The second phase develops suddenly with severe shortness of breath and cyanosis. Shortly thereafter, the terminal phase develops and typically lasts less than 24 hours with a 90-95% fatality rate despite treatment. Anthrax is not contagious and has sometimes been referred to as the perfect weapon. Once the victim exhibits symptoms it is usually too late.



## **Brucellosis**

Brucellosis is also known as undulant fever. Incubation for brucellosis varies. It can range from 3-4 weeks, but may be as short as one week to as long as several months. Symptoms include prolonged fever, headaches, profuse sweating, chills, and muscular and/or joint pain. If left untreated, the disease can persist for months or years with relapses and remissions. Fatalities are uncommon, even without treatment.



## Cholera

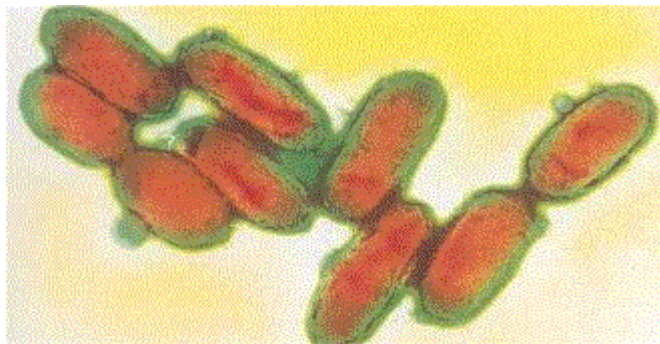
Cholera is caused by infection with *Vibrio cholerae*. Cholera is an acute human gastrointestinal disease, characterized by a sudden onset of nausea, vomiting, profuse watery diarrhea with rice water appearance, rapid loss of bodily fluids, toxemia and collapse. The incubation period for Cholera is 1-5 days, with 3 days as the average. Cholera is fatal in 3-30% of treated cases and 50-80% of untreated cases.

## Plague

Plague is a disease caused by an infection with the bacterium *Yersinia pestis*. Plague is transmitted to humans by the bite of an infected flea, or person-to-person by the respiratory route. In general, it is characterized with high fever, extreme weakness, glandular swelling and pneumonia. If untreated the disease steadily progresses until the victim dies. The disease only lasts for 1-2 days before death occurs (if untreated).

Plague occurs in two primary clinical types in humans. Bubonic plague, the most common type of plague, is transmitted from rats to humans by the bite of an infected flea. The bacilli spread rapidly throughout the lymphatic system, causing enlarged lymph nodes (buboes). These buboes often turn black hence the term, "Black Death."

Pneumonic plague is the airborne form of so-called "Black Plague." Symptoms include a cough with bloody sputum, fever, and pathogenic (dead) tissue in the lymph nodes. This highly contagious form of plague has caused pandemics in the past. Untreated plague is always fatal.



Microscopic View of *Yersinia pestis*



Buboes on the neck of a Plague victim

## Tularemia

Tularemia is caused by *Francisella tularensis* and is also called rabbit fever and deer fly fever. One to 10 days after exposure to aerosolized tularemia, there is an abrupt onset of fever, chills, headaches and muscular pain, with a non-productive cough. It is not considered contagious, but can be fatal.

## Q Fever

Q fever is caused by a rickettsia, *Coxiella burnetii*. The disease, originating from Australia was called query fever because the causative agent was unknown. Q fever is rarely contagious and has an incubation period from 10-21 days. Symptoms include those commonly associated with the flu such as fever, chills, headache, weakness, cough and chest, muscle and/or joint pain. Other symptoms are inflammation of the brain and membranes surrounding the heart. Normally it is not fatal.

## Smallpox

The variola virus causes smallpox. The World Health Organization (WHO) declared endemic smallpox eradicated in 1980. Extremely infectious and highly contagious, smallpox has a very high mortality rate. After an incubation period of 7-17 days, a pox-like rash forms. Patients may present

fever, muscle rigidity and shivering, malaise, headaches, vomiting, and other symptoms. The rash becomes pustular and scabs start forming 8-14 days after the onset of the disease leaving depressed pigmented scars. As a historical note, the British Army may have used smallpox against Native Americans by giving them blankets from the beds of smallpox victims during the French and Indian Wars.



Smallpox Victim

### **Venezuelan Equine Encephalitis (VEE)**

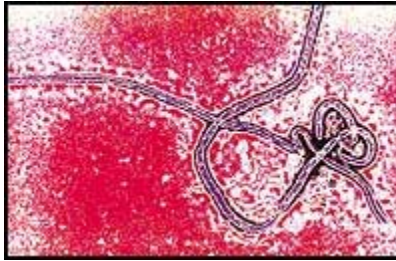
VEE is a mildly contagious disease with an incubation period of 1-4 days. Symptoms usually include fever, headaches, myalgia and vomiting. They may also include drowsiness, chills, sore throat and diarrhea. VEE can be fatal.

### **Viral Hemorrhagic Fever**

Hemorrhagic viruses include Ebola, yellow fever, Dengue fever, Crimean-Congo hemorrhagic fever, the Hantaan viruses and several others. The viral hemorrhagic fevers are a diverse group of RNA viruses from several different families. Ebola is the most widely discussed hemorrhagic fever. Ebola was first recognized in western equatorial Sudan and nearby Zaire in 1976. A second outbreak occurred in Sudan in 1979, and in 1995 a large outbreak occurred in Kikwit, Zaire.

Symptoms of viral hemorrhagic fevers include fever, muscular pain (myalgia), headaches, prostration, hemorrhage, capillary leaks, hypotension and shock.

They are generally moderately contagious and very often fatal. The Ebola virus can be directly passed through direct contact of bodily fluids.



Ebola  
Microscopic View

### **Botulinum Toxins**

There are seven related neurotoxins produced by the *Clostridium botulinum* bacteria. They are some of the most toxic materials known to man. These toxins cause life-threatening paralysis leading to progressive weakness of the extremities and respiratory muscles, leading to respiratory failure. Symptoms may include flaccid paralysis, droopy eyelids, dry mouth and throat, difficulty talking and swallowing, blurred and/or double vision, and difficulty breathing. These symptoms can occur as quickly as one hour after exposure. Botulinum is considered one of the most toxic organic materials known. For example, Botulinum Toxin-A is 15,000 times more toxic than VX and 100,000 times more toxic than Sarin, two of the most well known nerve agents.

### **Staphylococcal Enterotoxin**

*Staphylococcus aureus* produces a number of exotoxins, one of which is Staphylococcal enterotoxin B, or SEB. Such toxins are referred to as exotoxins since they are excreted from the organism; however, they normally exert their effects on the intestines and thereby are called enterotoxin. These toxins commonly cause food poisoning after the toxin is ingested from improperly handled foods. Symptoms include fever, chills, headache, myalgia, non-productive cough, nausea, vomiting, and diarrhea. These symptoms can occur between 5 minutes and 1 hour.

## Ricin

Ricin comes from castor beans. Castor beans are found throughout the world, and the toxin is easily produced. Ricin is therefore a widely available toxin. When inhaled as a small particle, this toxin may produce pathogenic changes within 8 hours and severe respiratory failure in 36-72 hours. When ingested, ricin causes severe gastrointestinal symptoms followed by vascular collapse and death. This toxin was used in the assassination of Bulgarian exile Georgi Markov in London in 1978. Markov was attacked with a specially engineered umbrella which implanted a ricin-containing pellet into his leg. As little as a milligram (1/1000 of a gram) can kill an individual.



Ricin  
Microscopic  
View

## Mycotoxins (Trichothecene Mycotoxins)

These include more than 40 toxins produced by various fungi, some of which may cause death. Symptoms can include burning skin, redness, tenderness, blistering, nasal itching and pain, sneezing, nosebleeds, difficulty breathing, wheezing, cough, weight loss, vomiting, bloody diarrhea, and diffuse hemorrhaging. Symptoms may occur within 5 minutes to 1 hour. Mycotoxins allegedly have been used in aerosol form ("yellow rain") to produce lethal and nonlethal casualties in Laos (1975-81), Kampuchea (1979-81), and in Afghanistan (1979-81). It is unknown if these reports are true.

Biological agents have had limited use in warfare. The United States destroyed its offensive stockpile in the late 1960's. Other countries have not necessarily followed suit. There have been scattered reports of alleged use of biological agents by the Japanese during World War II in Asia, as well as an incident in the former Soviet Union involving anthrax. In the United States there was only one incident in the last 100 years where a biological agent was used by terrorists that caused any injuries. In 1983 a religious cult in Oregon used salmonella to contaminate the salad bars of a number of local restaurants. As a result, 751 people were sickened. Fortunately, there were no fatalities. (This incident will be discussed later in detail).

## **Nuclear Materials**

There are two possible and fundamentally different threats that come under the heading of nuclear terrorism. The first is the use or threatened use of a nuclear bomb. This could occur by way of a nuclear nation providing a nuclear device to a terrorist organization, by terrorists stealing a complete nuclear device, or by terrorist fabricating an improvised nuclear device after acquiring the necessary amount of fissionable material.

The second threat is the incorporation of nuclear materials into the construction of a conventional explosive device to disperse radioactive materials around the explosion site. This is known as a radiological dispersal device (RDD). A variation of this option would be the detonation of a conventional explosion in the vicinity of nuclear materials, such as a nuclear power plant or the shipment of radioactive cargo.

While it is possible, it is unlikely that any terrorist organization could build a nuclear device. The number of nations with nuclear capability is relatively small, and all have established safeguards to protect their arsenals. It is highly unlikely that a nation would risk its own safety by handing over a complete nuclear weapon to a terrorist group. While it cannot be ruled out, experts consider the possibility of a terrorist detonating a nuclear weapon to be very remote.

The theft of nuclear material and nuclear weapons, however, is a tremendous concern. Since the break up of the former Soviet Union, the possibility

exists that terrorist organizations may have nuclear weapons. Even if a terrorist organization could obtain a weapon from an existing supply, it is highly unlikely that they could detonate it. All Western and former Soviet nuclear weapons are protected by sophisticated "Permissible Action Links" (PAL) systems to prevent unauthorized or accidental use. Contrary to what you might see in a James Bond movie, one cannot simply punch in some numbers and cause a nuclear detonation. Unless activated by a multi-digit code, the weapon cannot detonate and will be rendered safe if incorrect codes are entered.

While considered remote, it is possible that a terrorist organization could develop a radiological dispersal device (RDD). In a scenario where a small explosive (perhaps a pipe bomb) incorporates relatively small amounts of radioactive materials, the threat is quite possible. Radioactive materials are used widely in industry and in the healthcare professions. It would be relatively easy for a terrorist group to acquire small amounts of materials overtly or clandestinely.

There is precedence for this type of incident. The New York Times reported that on Nov, 23, 1995, the Russian Independent Television Network was contacted by a Chechen separatist organization and told of the location of a package in Izmailovsky Park in Moscow. The 30-pound package contained radioactive cesium and explosives. The Chechen separatists indicated this was one of four they had smuggled into Russia, and at least two more were in Moscow, rigged to explode at any time. While the call to the news agency suggests the Chechens intended to have the device located before detonation in order to establish credibility for future threats, it made it clear that this type of terrorism is both possible and effective.

## **Incendiary Devices**

Incendiary devices have been used for centuries. Incendiary devices are capable of causing property damage from fire, loss of life, and generate panic among the public. The Irish Republican Army (IRA) has used incendiary devices throughout Europe for years. Their attacks have resulted in deaths, injuries and tremendous monetary losses. In the United States, the use of incendiary devices is on the rise. According to the FBI Bomb Data Center:

- Incendiary devices were used in approximately 20-25% of all bombing incidents in the United States.
- When used, incendiary devices ignite approximately 75% of the time.
- Less than 5% of actual or attempted bombings (including those involving incendiaries) were preceded by a threat.

These types of incidents are often difficult to classify as terrorism or simple arson involving insurance fraud, non-terrorist criminal activity or other action.

Probably the easiest terrorist weapon to build would be a Molotov cocktail: Bottle, gas, rag, match.

### **Chemical Agents**

Chemical agents are substances that can injure or kill through a variety of means. Chemical agents fall into 5 broad categories.

1. Nerve agents
2. Blister agents (vesicants)
3. Blood agents
4. Choking (pulmonary) agents
5. Irritant

Chemical warfare (CW) agents have been thought of as chemicals used on the battlefield to kill or injure the enemy. Many chemicals have been used for this purpose. In World War I, for example, phosgene, chlorine and mustard agents were all used with deadly effect.

More recently, chemical warfare agents have threatened the civilian population as well. Several incidents in Japan (Matsumoto June 1994 and Tokyo March 1995) caused worldwide reconsideration of chemical warfare agents as terrorist weapons.



## Nerve Agents

Nerve agents are specific organophosphorus compounds considered the most dangerous of the chemical warfare agents. The common nerve agents are basically the same compounds originally developed by the Germans in the 1930's as pesticides to kill rats. In the late 1930's, a German industrial chemist, Dr. Gerhard Schrader, synthesized Tabun (GA), an extremely toxic organophosphate compound. The name "Tabun" has no particular meaning and was reportedly made up by Dr. Schrader to disguise the discovery. The first time Tabun was used in war was by Iraq against Iran in 1984.

Two years after Schrader discovered Tabun, he synthesized Sarin (GB), similar to Tabun, but even more toxic. The name Sarin is derived from the scientists involved in its creation: **S**chrader, **A**mbrose, **R**udiger and van der **L**inde. During World War II, Nazi Germany weaponized thousands of tons of these potent organophosphates that would later be called nerve agents. Why they were not used during the war is a mystery. Hitler, a mustard agent casualty during World War I, did not approve of chemical warfare agents for combat. Perhaps Hitler feared a massive retaliation for Axis use of nerve agents. Whatever the reason, Germany's nerve agent program was a complete secret until the closing days of the war. The end of World War II did not stop the development and stockpiling or use of nerve agents.

One of the biggest misconceptions about nerve agents is that they are gases. The term nerve gas is incorrect terminology. These chemicals are liquids that have the consistency of motor oil, designed to be dispensed as aerosols. Therefore, contrary to what Hollywood would have you think, there is no such thing as nerve gas or mustard gas.

There are two major classes of nerve agents. They are known as the G-series agents and the V-series agents. The "G" refers to the German origination and the letter following the "G" is derived from the order in which the agents were developed. The letter "V" stands for venom and the "X" following the "V" refers to a chemical series. Therefore the military classifications for these agents are:

- Tabun (GA)
- Sarin (GB)

- Soman (GD)
- V agent (VX)

There was never a chemical agent coded "GC," as it used to be the medical reference for the disease gonorrhea.

Exposure to nerve agents can occur via inhalation or skin contact. Depending on the amount of the exposure, nerve agents can cause the following symptoms:

Pinpoint pupils (miosis)  
 Runny nose (rhinorrhea)  
 Difficulty breathing  
 Nausea and vomiting  
 Loss of consciousness  
 Convulsions  
 Seizures  
 Paralysis  
 Death

Nerve agents inhibit acetylcholinesterase in tissue, and their effects are caused by the resulting excess acetylcholine. In English that means the nerve agent tells your glands to "turn on," but they cannot turn themselves off. As a result, the body produces copious secretions, runny nose, watery eyes and excess saliva. The nerve impulses cause uncontrollable muscular movement and in the final stages, seizures, convulsions and death. The most typical symptom of nerve agent exposure is "pinpoint pupils" (miosis).

### **Blister Agents (vesicants)**

Blister agents, also called vesicants, cause red skin (erythema), blisters, irritation, eye damage, respiratory damage and gastrointestinal damage. Their effect on exposed skin is similar to that of a corrosive chemical like lye or a strong acid. The effects from exposure to blister agents are delayed for 2-24 hours. This makes exposure difficult to detect until it is

too late and the damage is done. Blister agents, specifically sulfur mustard have been a military threat since they were first introduced in World War I.

Sulfur mustard, developed in the early 1800s, was first used on the battlefield during World War I by Germany in 1917. Despite being introduced into the war late, mustard produced the most chemical casualties. Italy allegedly used mustard in the 1930s against Abyssinia. Egypt used mustard in the 1960s against Yemen, and Iraq used mustard in the 1980s against Iran and the Kurds.

Mustard is an oily liquid with color ranging from light yellow to brown. Its odor is that of garlic, onion or mustard, (hence the name). However, one should not rely on the sense of smell to detect mustard. Pure mustard is reported to be odorless. Once again, these are agents not gases.

The primary effects of mustard occur in the eye, airways and skin. Absorbed mustard may produce effects in other bodily systems as well. Erythema (reddening of the skin) is the first and earliest form of skin injury appearing after exposure to mustard. The reddening resembles sunburn; it is associated with itching or burning and stinging pain. The reddening appears 2-24 hours after exposure. Normal clothing provides no protection from this type of injury. Mustard can damage the airways if the vapor is inhaled. If the inhalation amount is large the chemical can cause respiratory failure. This is the most common cause of death as a result of exposure to mustard. The eyes are the organs most sensitive to a mustard vapor injury. The time between exposure and visible injury is shorter for eye injury than for skin injury. The gastro-intestinal tract is also susceptible to damage from mustard, from absorption or accidental ingestion.



Mustard casualty line in World War I

## Blood agents

Blood agents are toxic industrial chemicals such as cyanide. These chemicals can cause rapid respiratory arrest and death, since these agents do not allow oxygen to be carried to the cells and organs through the bloodstream. In pure form, these agents are gases. The two best examples of blood agents are hydrogen cyanide and cyanogen chloride.

The French used about 4,000 tons of cyanide in World War I without significant success, probably due to the small 1-2 pound munitions being used and the fact that cyanide evaporates very quickly.

Exposure can occur through contact with either liquids or vapors. Symptoms of exposure may include the following:

- Increased heart rate
- Difficulty breathing
- Dizziness
- Nausea
- Vomiting
- Headaches
- Convulsions

- Cardiac symptoms (i.e., cessation of respirations and heartbeat)

Some victims may report an odor of bitter or burnt almond or peach kernels.

In the United States the chemical industry manufactures over 300,000 tons of hydrogen cyanide annually. Cyanides are used in electroplating, mineral extraction, dyeing, printing, photography, agriculture, and in the manufacture of paper, textiles and plastics.

### **Choking Agents** (pulmonary agents)

Choking or pulmonary agents are toxic industrial chemicals such as chlorine and phosgene. These chemicals cause eye and airway irritation and damage. For example, inhalation of chlorine causes the chlorine in your lungs to mix with the moisture in your lungs and turn into hydrochloric acid. This causes fluid to build up in the lungs impeding oxygen transfer. The victim drowns in his own body fluid. This condition is often referred to as "dry-land drowning."

Historically, both chlorine and phosgene were used in World War I by both sides. The U.S. military no longer stockpiles these agents. Due to the widespread availability of these industrial chemicals they are considered a terrorist threat. Exposure to these agents is through inhalation of vapors. The primary effect is pulmonary edema. Other symptoms may include eye and airway irritation, dyspnea and chest tightness, nausea, vomiting, choking, and severe coughing.

### **Irritants**

Irritants are also called, "riot-control agents." These chemicals include tear gases and pepper spray. These agents cause burning and pain to exposed skin and mucous membranes. Examples of irritating agents include:

- Tear Gas
- Mace
- Pepper Spray



Pepper Spray is commercially available in a variety of sizes and styles.

The symptoms of exposure cause an immediate burning of the eyes, coughing, involuntary eye closure, burning in the nostrils, respiratory discomfort and tingling of exposed skin. The effects occur within seconds of exposure, but seldom persist beyond a few minutes after exposure has ended. Victims with respiratory problems such as asthma, small children and the elderly may experience symptoms for a longer period of time.

## Explosives

Historically explosives have been the weapon of choice for terrorist worldwide. Approximately 70% of all terrorist incidents involve the use of explosives. Bombs vary in size relative to their intended target. The weight of explosive devices varies considerably, the pipe bomb weighing several pounds compared to the truck bomb weighing several tons. The vehicle bomb that destroyed the Marine Corps barracks in Beirut was a 12,000-pound device, one of the largest vehicle bombs ever detonated.

Terrorists use an assortment of dangerous materials to fabricate bombs. The bomb detonated at the World Trade Center (WTC) in 1993 used 1,200 pounds of urea nitrate. The device used in Oklahoma City in 1995 was a mixture of 4,000 pounds of ammonium nitrate and fuel oil. The use of sodium cyanide is suspected in the 1993 WTC bombing. This was not known until some time after the emergency phase of the incident. Non-conventional bombs dismantled in Iraq after the Gulf War were found to contain aflatoxin, a fungal toxin known to induce liver cancer months to years after exposure.

According to the FBI bomb statistics covering the years 1990-1995, there were 10,122 actual bombings (including incendiaries) and another 3,278 failed bomb or incendiary attacks that resulted in 3,176 injuries and 355 deaths.

### **Improvised Explosive Devices**

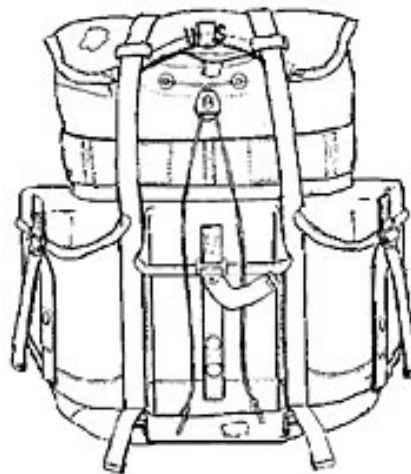
Vehicle bombs are usually large powerful devices that consist of a large quantity of explosives fitted with a timed or remotely triggered detonator packed onto a car or truck. There have been several notable vehicle bombs that have caused significant death, injury and property damage.

<b>Year</b>	<b>Location</b>	<b>Injuries</b>	<b>Fatalities</b>
<b>1983</b>	<b>Marine Barracks Lebanon</b>	<b>80</b>	<b>239</b>
<b>1993</b>	<b>World Trade Center, NY City</b>	<b>1,042</b>	<b>6</b>
<b>1995</b>	<b>Federal Building, OK City</b>	<b>518</b>	<b>168</b>
<b>1998</b>	<b>U.S. Embassies Africa</b>	<b>4722</b>	<b>223</b>
<b>2000</b>	<b>USS Cole Aden Harbor</b>	<b>39</b>	<b>17</b>

Pipe bombs are the most common explosive device. They are at the opposite end of the scale from vehicle bombs in terms of size and power. Pipe bombs usually consist of a quantity of explosives sealed into a length of metal or plastic pipe. A timing fuse usually controls detonation, but other methods include electronic timers, remote triggers and motion sensors.



Another type of improvised explosive device is a “satchel charge.” Satchel charge is an old military term for an explosive device carried in a canvas bag (satchel). Recently “daypacks” or knapsacks have been used to carry the device, while the explosives have contained antipersonnel materials such as nails and glass to inflict more casualties. The bombing at Centennial Park during the Olympics is an example of a “satchel charge” use.



FBI drawing of the satchel used in the Centennial Park bombing in Atlanta.

Another type of explosive device that has been widely used in the past is the package or letter bomb. Package bombs were the weapon of choice for Ted Kaczynski (aka the Unabomber).





Based on previous bombing incidents, terrorists may use a variety of distraction techniques such as a small explosion to attract attention and crowds. Once the audience of bystanders and emergency responders has assembled, a larger, more powerful explosion is detonated. This delayed explosion is called a "secondary device." A secondary device was used in two of the three bombings that occurred in Atlanta in 1997. In these bombings the bomber targeted the emergency responders.

Most emergency response agencies have limited capabilities to deal with the aftermath of a major bombing incident. Add the thought of the blast containing chemical nerve agents, and the dynamic of the incident changes very rapidly.

The bomber does not need to concoct an elaborate device with exotic chemicals to cause havoc and mass destruction. The use of a pipe bomb attached to a propane storage container can be just as catastrophic. Most communities in Virginia store enough propane and common hazardous materials to facilitate a significant explosion with little or no effort from the bomber. Criminals using improvised explosives are nothing new. However, they have become more complex, more destructive, and should no longer be considered just a law enforcement issue. A major bombing will involve a significant response from local, state and federal agencies to effectively manage the incident. It is important to remember that the scene of a bombing is also a crime scene and that crime scene is full of evidence some of which is very small. Extra care should be employed not only to insure that

evidence is not destroyed but there may be unexploded or unconsumed bomb material that could be hazardous to those on scene.



**Each of the flags represents evidence at a bombing incident**

Bombs or explosive materials that have not completely detonated are extremely dangerous. Fragmented pieces of sensitive material may be scattered throughout the incident site after an incomplete explosion. Any shock, impact or heating of the materials may cause the material to explode.

According to reports published from the Federal Bureau of Investigation Bomb Data Center (FBI -BDC), the use of explosives by criminals is increasing annually. In addition to using real explosives, hundreds of "hoax" devices are planted each year to disrupt daily activities and interfere with certain businesses.

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